Arboris
Replicable solutions for climate and biodiversity
Case Study Database

The Case of Gauteng

Aligning **subnational** implementation for **climate adaptation** with national priorities

Regions4
Sustainable Development

Special Collection

This case study is part of a special collection developed by Regions4 with the support of the European Climate Foundation (ECF), examining how subnational governments engage with National Adaptation Plans (NAPs) within multilevel governance contexts.

The collection presents three cases - Gauteng (South Africa), São Paulo (Brazil), and Lombardy (Italy) - each representing a distinct governance configuration with its own strengths, gaps, and contextual conditions in aligning legal mandates and financial capacity for NAPs implementation.

The insights are drawn from interviews and survey data and are intended to inform ongoing research and policy discussions on strengthening multilevel adaptation governance.

Explore the full collection in **Arboris**

People

Nature

Nature

Territories

Solutions

Connection



Arboris
Replicable solutions for climate and biodiversity
Case Study Database

Regions4
Sustainable Development

RegionsWithNature

European Climate Foundation

GAUTENG
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Discover more **regional solutions** for climate & biodiversity on **Arboris**.

About this Publication

Introduction

As the most populous and economically significant province in South Africa, Gauteng is highly exposed to climate risks, including flooding, drought, and infrastructure stress. Its experience highlights broader challenges in multilevel governance, where responsibilities are clearly assigned, but resources and coordination mechanisms are still evolving.

Key information

Location:
Gauteng Province, South Africa

Governance system:
Hybrid (cooperative governance across spheres)

NAP references to subnationals?
Yes, explicitly

Areas of focus:
Water, urban resilience, infrastructure, human settlements, disaster risk

Contributor:
Gauteng Provincial Government, Gauteng Department of Environment (GDEnv)

Author

Regions4 Sustainable Development with the support of the European Climate Foundation (ECF)

October, 2026 © Regions4

Table of Contents

Background and Context	**5**
Case Overview	5
Institutional and Planning Frameworks	6
Financial Capacity and Constraints	7
Multilevel Adaptation in Practice	**8**
The SIRACC and the Mainstreaming Approach	8
From Planning to Implementation	9
Replicability and Key Lessons Learned	**10**
Takeaways	**11**
References	**12**
For more information	**12**

Background and Context

Case Overview

Gauteng is South Africa's most urbanised and economically significant province, concentrating a large share of national infrastructure, population, and economic activity within a relatively compact geographic area.

Despite being the smallest province by land area, it is home to the largest share of the country's GDP and urban population, making it an economic hub around which business is centred and a critical node in South Africa's development landscape.

South Africa's National Climate Change Adaptation Strategy (NCCAS, 2020), which serves as the country's National Adaptation Plan submitted to the UNFCCC, provides the overarching national framework within which Gauteng's adaptation governance is examined in this case study.

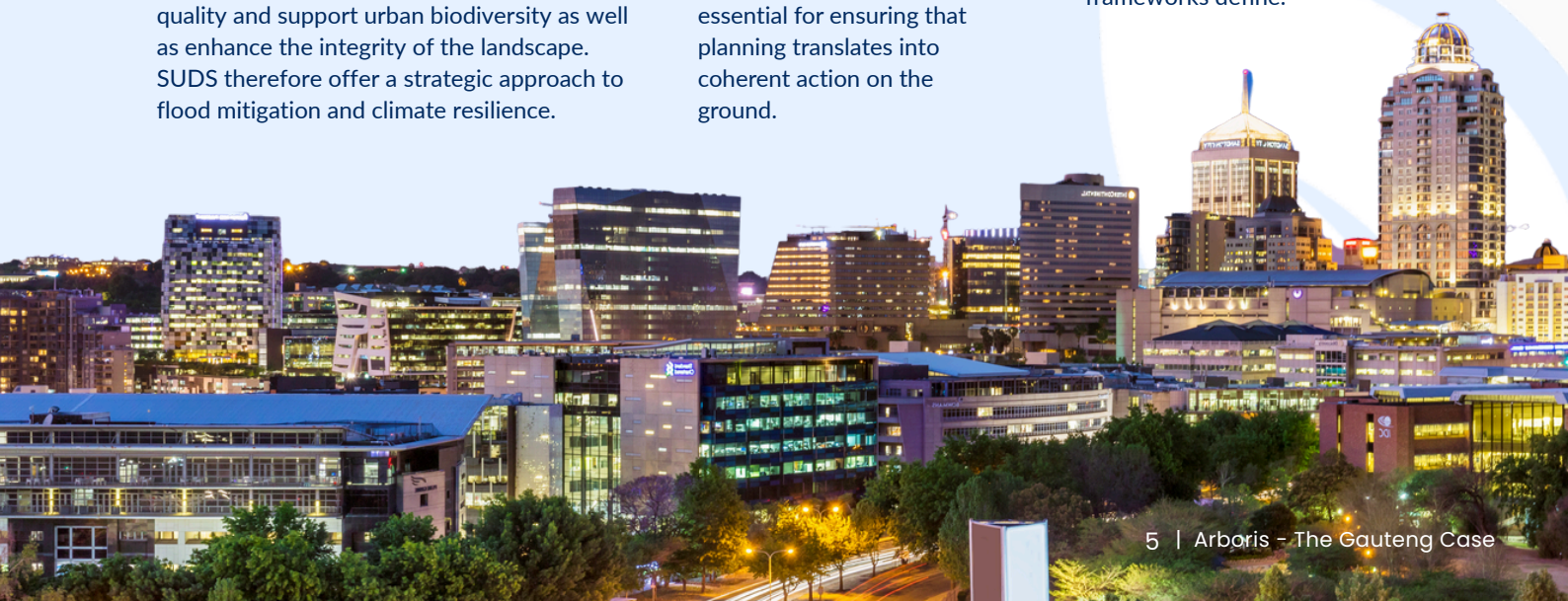
The climate-related pressures Gauteng faces are diverse and interconnected, where more intense rainfall is expected to alternate with increasingly severe droughts in the coming years.

Flooding events associated with intense rainfall affect informal settlements and built infrastructure alike. Water stress, compounded by aging distribution systems and growing demand, represents a critical long-term vulnerability. Sustainable Urban Drainage Systems (SUDS) provides a solution to managing rainfall replicating nature systems in the form of permeable pavements, green roofs, swales, and retention basins. These systems reduce flood risk, improve water quality and support urban biodiversity as well as enhance the integrity of the landscape. SUDS therefore offer a strategic approach to flood mitigation and climate resilience.

Within South Africa's cooperative governance system, adaptation responsibilities are distributed across three constitutionally recognised spheres: national, provincial, and municipal. Gauteng occupies a central intermediary position, translating national adaptation priorities into provincial strategies while supporting implementation across its three metropolitan municipalities: Johannesburg, Tshwane, and Ekurhuleni.

This positioning places the province at the interface between national policy direction and municipal delivery, where coordination across governance levels is essential for ensuring that planning translates into coherent action on the ground.

The province's role in adaptation is accordingly multi-dimensional, spanning strategic planning, intergovernmental coordination, mainstreaming of climate considerations into development instruments, and technical support to municipalities, acting as a coordinating and enabling layer within a broader multilevel governance system. This case study examines how that role unfolds in practice, tracing a chain that runs from the NCCAS's national priorities, through the Climate Change Act's binding subnational obligations, to Gauteng's own strategic response, and to the implementation gaps that emerge where financial capacity and institutional resources have not yet caught up with the responsibilities these frameworks define.



Institutional and Planning Frameworks

Gauteng's adaptation governance is grounded in a progressively developed **legal and policy framework** closely linked to national climate governance reforms.

At the national level, the Climate Change Act (2024) establishes formal obligations for provinces and municipalities to conduct climate risk and vulnerability assessments and to develop response implementation plans. These plans are required to be integrated into existing development instruments, including Integrated Development Plans and Spatial Development Frameworks, ensuring that adaptation is embedded within broader territorial, infrastructure, and development planning systems rather than treated as a standalone policy area.

The NCCAS provides overarching guidance for adaptation planning across all spheres of government, explicitly calling on provinces to develop climate change response strategies and integrate adaptation into IDPs and Spatial Development Frameworks. Gauteng's City-Region Climate Change Response Strategy and Action Plan was developed in direct response to this national framework, integrating adaptation considerations across key sectors including water management, infrastructure development, human settlements, and disaster risk management. Together, these instruments establish a structured institutional basis for adaptation planning and provide a common reference point for coordination across government levels and sectors.

Coordination is supported through a range of formal mechanisms, including intergovernmental working groups, adaptation forums, and structured reporting systems. These include the Intergovernmental Committee on Climate Change, Premier's Expert Advisory Committee on Climate Change, Gauteng Climate Change Forum and the Gauteng Climate Change Indaba. These platforms facilitate alignment between national, provincial, and metropolitan actors, enabling regular exchange of information and joint planning processes.

In NAP Global Network terms, South Africa's coordination architecture combines vertical mechanisms, linking provincial governments to national bodies through the Presidential Climate Commission and the Intergovernmental Committee on Climate Change, with multidimensional platforms such as the ones mentioned, which bring together government, civil society, academia, and the private sector around a shared adaptation agenda.

Gauteng reports formally to the national government on an annual basis, complemented by quarterly informal updates, and is developing a provincial climate change register into a web-based monitoring, reporting, and verification platform aligned with national systems. These mechanisms reflect a governance environment in which formal policy frameworks are in place and operational tools are being progressively developed and refined.

In practice, the degree of integration varies across sectors. Environmental and climate-focused units are further advanced in mainstreaming climate considerations, while sectors such as transport, housing, and infrastructure are progressively incorporating these elements into their planning and investment processes, reflecting differentiated levels of institutional readiness and sector-specific priorities across the province.



Financial Capacity and Constraints

Gauteng's governance and planning architecture is relatively well developed, while **financial capacity remains the most significant factor** affecting the pace and depth of implementation.

Adaptation financing in the province is structured through four main channels: intergovernmental fiscal transfers, the primary source, complemented by national government allocations, limited international and multilateral funding accessed via national channels, and emerging public-private partnerships.

While these mechanisms provide a functioning financial framework, the province assesses current resource flows as highly insufficient relative to the scale and complexity of its adaptation needs. On an annual basis, the Gauteng Department of Environment directs about R 5000 000 (about US$300 000) towards climate change adaptation. This figure stands in contrast to the NCCAS's Intervention 8, which explicitly calls for substantial flows of adaptation finance from national fiscus and international sources, illustrating, in concrete terms, the gap between what the national plan envisions and what provincial budgets currently deliver.

Among the Department's adaptation initiatives are the SDG Project, the Climate Change School Awareness Programme, tree planting/greening, development of adaptation plans, as well as coordination mechanisms such as Climate Change Forum, Premier's Expert Advisory Committee on Climate Change and Climate Change Indaba. It must be noted that there are other various initiatives on food security, health, disaster management, water, and human settlements championed by other provincial Departments. In addition, the province is working with several partners, including municipalities, the World Bank, and the National Treasury on the catchment management programme to address the effects of climate change as well as development and implementation of Gauteng City Region Heat Action Plan.

A structural feature of the current financing landscape is the prevalence of short-term, project-based funding cycles, which sit in tension with the long-term investment horizons that adaptation interventions typically require. Infrastructure retrofitting, flood mitigation systems, and ecosystem restoration, all priorities in Gauteng's adaptation strategy, require sustained multi-year investment. Current funding structures do not consistently support this continuity, affecting the sequencing and pace of implementation. This tension is compounded by the variability of intergovernmental transfers, which are linked to national budget cycles and subject to shifting political priorities, making multi-year adaptation planning more difficult.

Accessing available funding presents its own set of challenges. The province identifies all five of the following as significant barriers: complex application procedures, competitive selection processes, short-term funding cycles, restricted and project-specific use conditions, and limited administrative and technical capacity for fund mobilisation. This combination is particularly constraining given that the provincial adaptation team is small and currently lacks a dedicated Project Management Office, limiting its capacity to absorb the administrative demands of grant writing, compliance reporting, and fund coordination across multiple streams simultaneously. As of July 2026, only three officials are responsible for the climate change adaptation work in the Gauteng Department of Environment.

The consequences of these constraints are visible in concrete terms. Approximately 47% of potable water in Gauteng is lost through leaking infrastructure, a critical adaptation priority with direct implications for water security under climate stress, yet no dedicated budget has been allocated to address it at the required scale. This example illustrates a broader structural misalignment: the Climate Change Act assigns clear responsibilities to provinces, but the financial system does not yet provide resources commensurate with those obligations. A further dimension of this misalignment is sectoral: climate change continues to be perceived primarily as an environmental issue within parts of the provincial administration, meaning departments such as transport and infrastructure do not yet systematically factor adaptation into their budgeting and investment decisions. This limits the extent to which available resources, however constrained, are directed toward adaptation priorities across the full breadth of provincial functions.

It is worth noting that the province has full autonomy to allocate its own resources, and this flexibility is an important asset. However, the scale of self-generated revenue available for adaptation is limited relative to need, and the broader funding landscape remains fragmented and unpredictable.

Taken together, these factors mean that financial constraints in Gauteng are not solely a question of volume, but of structure, accessibility, and institutional readiness, all of which shape how effectively available resources can be mobilised and sustained over time.

For national governments and international partners, Gauteng's experience is a direct signal that the finance intervention envisioned in the NCCAS requires dedicated, predictable, and accessible funding channels at provincial level.

Multilevel Adaptation in Practice

The Kaalspruit catchment experience

One of the most illustrative examples of adaptation in Gauteng is the **Kaalspruit Resilient Catchment Management Plan**, developed in 2022,

an initiative directly responding to priorities identified in the NCCAS, namely flood risk reduction, wetland rehabilitation, and the strengthening of water-related infrastructure resilience, all areas explicitly prioritised under the NCCAS's strategic interventions on vulnerability reduction and adaptation mainstreaming.

The Kaalspruit catchment spans three major metropolitan municipalities - Johannesburg, Tshwane, and Ekurhuleni - and represents a densely urbanised and highly interconnected area experiencing increasing flood risk, environmental degradation, and infrastructure pressure.

A key characteristic of this case is that Gauteng did not initially have dedicated funding to implement the plan. Instead, the primary value of the initiative lies in its ability to bring together multiple municipalities under a shared planning framework. This coordination function proved critical in aligning priorities across jurisdictions that otherwise operate independently. Following its development, municipalities began mobilising their own resources to support implementation. Subsequently, National Treasury and the World Bank provided additional support, reinforcing the financial and technical capacity of the programme.

The Kaalspruit experience illustrates how adaptation planning can function as a coordinating device in contexts of fragmented governance. By establishing a shared diagnostic and intervention framework, the plan created a common reference point for municipalities that typically operate within separate administrative and budgetary systems. This enabled alignment around priorities such as flood risk management and ecosystem rehabilitation, even in the absence of initial dedicated funding.

External engagement from National Treasury and international partners further reinforced this dynamic. Their involvement was enabled not only by the technical quality of the plan, but also by its ability to demonstrate cross-jurisdictional relevance and implementation potential. In this sense, planning instruments can play an intermediary role between local priorities and external financing opportunities, helping to bridge governance and resource gaps across levels of government.

More broadly, the Kaalspruit case reflects Gauteng's adaptation approach, where the province often plays a convening and enabling role rather than directly financing or implementing all interventions. This positioning allows it to facilitate alignment across governance levels while relying on a combination of municipal and external resources for execution. Overall, it illustrates a broader dynamic in NAP implementation:

subnational governments that develop credible, well-coordinated plans, even without dedicated implementation budgets, can create the conditions that attract national and international financing, effectively translating national adaptation priorities into action from the bottom up.



From Planning to Implementation

The NCCAS sets an ambitious mandate for subnational governments: provinces are expected to develop climate response implementation plans, integrate adaptation across sectors, and progressively build the institutional and financial capacity needed for delivery.

Gauteng has responded with a substantial portfolio of strategies and planning instruments. Yet the distance between what the NCCAS mandates and what provincial capacity currently allows remains the central implementation challenge, and the experience of translating national priorities into consistent action across sectors and municipalities is shaped by several interconnected factors. Translating provincial strategies into consistent implementation requires adaptation priorities to be embedded in the day-to-day planning and investment decisions of sectors beyond environmental departments.

While adaptation is increasingly reflected in provincial planning instruments, the pace of integration varies across sectors, reflecting differences in institutional capacity, technical expertise, and competing investment priorities. Strengthening cross-sector ownership remains a key implementation challenge. Infrastructure resilience illustrates the implications of these implementation gaps. Addressing longstanding vulnerabilities, such as water losses from ageing distribution systems, requires sustained investment and stronger coordination between climate objectives and infrastructure planning. This highlights the importance of aligning legal mandates, sectoral planning, and financial resources so that identified adaptation priorities can be translated into action.

Institutional capacity at provincial and municipal level also shapes the pace and consistency of implementation. Teams responsible for adaptation planning, project preparation, and funding applications operate in resource-constrained environments, and building sustained technical capacity, particularly around grant writing, project management, and finance mobilisation, is identified as a key enabler for accelerating the translation of plans into action on the ground. The NCCAS explicitly identifies capacity building as a strategic intervention, but national support in this area remains limited in scale and continuity relative to provincial needs.

Taken together, these factors point to a structural gap at the heart of NAP implementation in Gauteng: the national framework defines responsibilities clearly, but the operational guidance, financial instruments, and institutional support needed to fulfil them have not yet developed at the same pace.

Closing this gap, i.e., between mandate and capacity, between planning and delivery, is the critical next step in translating South Africa's national adaptation priorities into sustained provincial action.



Replicability and Key Lessons Learned

Gauteng's experience illustrates how strong institutional frameworks for adaptation can support an enabling governance environment through legal mandates, planning instruments, and coordination mechanisms.

At the same time, implementation outcomes are shaped by how these elements interact with financial resources, sectoral integration, and municipal-level capacity. For other regions considering how to apply these lessons to their own context, three interconnected dimensions should be taken into account.

NAP implementation depends on legal mandates that translate national commitments into subnational obligations.

South Africa's Climate Change Act does this explicitly by establishing binding obligations across provincial and municipal spheres, embedding adaptation within existing planning instruments rather than creating parallel structures. Their effectiveness depends on how they are translated into practice through technical guidance, institutional arrangements, and available resources. In Gauteng, adaptation responsibilities are clearly defined within national and provincial frameworks, and the progressive development of operational tools and implementation guidance represents the next phase of this work.

Effective NAP implementation requires coordination mechanisms that connect national frameworks to provincial and local delivery.

The NAP Global Network identifies vertical, horizontal, and multidimensional mechanisms as the three main types, Gauteng's experience illustrates all three in operation. The Kaalspruit experience illustrates how shared planning frameworks can function as coordinating devices that align priorities across jurisdictions and create conditions for external financing. Gauteng's intergovernmental working groups, adaptation forums, mandatory reporting systems, and emerging MRV platform offer replicable models for institutionalising multilevel coordination in similar governance contexts.

Financial conditions shape both the pace and depth of implementation.

Gauteng's experience highlights that the structure, predictability, and accessibility of adaptation finance matter alongside its volume. Developing well-coordinated, cross-jurisdictional adaptation plans, as demonstrated by the Kaalspruit initiative, can strengthen a region's ability to access national and international financing, particularly where dedicated fiscal transfers for adaptation remain limited.

Multilevel Governance Framework at a Glance – Gauteng, South Africa

Subnationals referenced in NAP	**Yes:** explicitly, with defined roles and planning requirements
Legal mandates	**Yes:** binding obligations under the Climate Change Act (2024)
Regional adaptation plan	**Partial:** integrated into broader climate strategy; no standalone plan
Capacity building	**Partial:** in place but limited in scale and continuity
Coordination mechanisms	**Strong:** multiple formal platforms and mandatory reporting
Financial capacity	**Insufficient:** fragmented, unpredictable, below implementation needs
Mandate–finance alignment	**Moderate:** obligations defined, but resources lag significantly behind



Takeaways

Gauteng's experience demonstrates that strong legal mandates and structured coordination mechanisms anchored in the NAP can establish a clear institutional foundation for subnational NAP implementation.

Yet mandates alone are insufficient: sustained delivery depends on aligning financial resources, operational guidance, and cross-sectoral institutional capacity with the obligations these frameworks define. Gauteng also illustrates that subnational governments are not merely implementers of national priorities. through coordinated planning and cross-jurisdictional partnerships, they can actively attract financing and shape the conditions for implementation in ways that feed back into the national adaptation effort.

For other regions, Gauteng's experience highlights that adaptation outcomes are shaped by the interaction between policy frameworks, institutional coordination, and financial systems. Strengthening implementation depends on how these elements are progressively aligned within existing governance structures.



References

Department of Forestry, Fisheries and the Environment (2020) National Climate Change Adaptation Strategy (NCCAS). Republic of South Africa. Available here.

Gauteng Department of Agriculture and Rural Development (2020) Gauteng City Region Over-arching Climate Change Response Strategy and Action Plan (March 2020). Gauteng Provincial Government, South Africa. Available here.

Government of South Africa (2024) Climate Change Act, 2024 (Act No. 22 of 2024). Government Gazette, Republic of South Africa. Available here.

Gauteng Department of Agriculture, Rural Development and Environment (2023), Kaalspruit Climate Resilient Catchment Management Plan, Gauteng Provincial Government, South Africa.

For More Information

To learn more about this project, contact us by email at **info@regions4.org** to schedule an informational meeting, clarify your questions, and receive support for the implementation of similar projects.

Contributions

Regions4

Héloïse Chicou,
Climate Action and Resilience Programme Manager

Mélisa Cran
RegionsAdapt Manager

Gabriela Carrera
Biodiversity Programme Officer

Brenda Tenório
Junior Communications Officer

External consultancy

Ana Dias
Regions4 Climate Programme Consultant

Aknowledgements

This case study was prepared with the support of the European Climate Foundation (ECF). The data were provided by the Government of the State of São Paulo (Secretariat for the Environment, Infrastructure and Logistics), the Gauteng Provincial Government (Department of Environment), as well as the regional authorities of Île-de-France (Department of Environment, Agriculture, Rural Affairs and Ecological Transition) and Lombardy. The findings and interpretations are the responsibility of the authors.

Disclaimer

This publication was supported by the European Climate Foundation. The authors are solely responsible for the information and opinions expressed in this publication. The European Climate Foundation cannot be held responsible for any use that may be made of the information contained in or expressed in this document.

About Regions4

Regions4 is a global network of subnational governments driving action in climate change, biodiversity, and sustainable development. It was born in 2002 to represent states, regions and provinces at UN negotiations, European Union initiatives and global discussions on biodiversity, climate change and sustainable development. Today, Regions4 brings together 59 members across 25 countries, collectively representing 171 subnational governments reaching over 430 million people.

For more visit: www.regions4.org

Rue Egide Van Ophem, 40 A, 1180 Uccle, Belgium

October, 2026 © Regions4